

Using Port 443 for MGMT Access and SSL VPN

Scope:

- Accessing the FortiGate's management page and SSL VPN on TCP port 443
- By default this is not possible as port 443 can only be assigned to one system service.
- Since SSL VPN and HTTPS administrative access are two different system services a workaround is required.

Requirements:

- Two publicly routable IP addresses (One additional to the one assigned on the outside interface)
- Space to create a loopback interface (There is a 128-256 max object limit for interfaces)
- Space to create a VIP (max VIP objects may be applicable)
- Space to create a firewall address object (max address objects may be applicable)
- Completed configuration of SSL VPN portal and settings
- Completed configuration of user groups to be used for SSL VPN authentication

Note: For a list of max values please visit the link below:

<http://docs-legacy.fortinet.com/fgt/handbook/40mr3/fortigate-max-values-40-mr3.pdf>

Step-by-step instructions:

1. Assign the additional external IP address to the outside interface by navigating to:
 - a. System > Network > Interface
 - b. Edit the external interface
 - c. Check "Secondary IP Address"
 - d. Click "Add"
 - e. Enter the IP address with subnet mask and choose desired administrative access (As this will only be used for SSL VPN it is recommended to leave all services unchecked).
 - f. Hit OK
 - g. Hit OK

Name: port10 (00:00:00:00:00:00)
 Alias: External
 Link Status: Down

Addressing mode: ☒ Manual ☐ DHCP ☐ PPPoE
 IP/Netmask: 98.52.23.2/255.255.255.248

☐ Dedicate this interface to FortiAP connection
☐ Enable one-arm sniffer
☐ Enable Explicit Web Proxy
☐ Override Default MTU Value: 1500 (bytes)

Administrative Access: ☒ HTTPS ☒ PING ☐ HTTP ☐ FMG-Access
☐ SSH ☐ SNMP ☐ TELNET

Weight: 0
 Spillover Threshold: 0 kbit/s

☒ Secondary IP Address
 Add

IP/Netmask	Administrative Access
52.12.59.5 255.255.255.255	

Comments: Write a comment... 0/63
 Administrative Status: ☒ Up ☐ Down

OK Cancel Apply

Figure 1: Secondary IP Address on External Interface

2. Create a loopback interface

- Navigate to System > Network > Interface
- Click on "Create New"
- Name the interface (i.e.: SSLVPN_Loopback)
- Choose Type "Loopback Interface"
- Enter any unused IP address (Leave all Administrative Access services unchecked)
- Hit OK

Name: SSLVPN_Loopback
 Type: Loopback Interface

Addressing mode: ☒ Manual ☐ DHCP ☐ PPPoE
 IP/Netmask: 10.52.62.72/32

☐ Enable Explicit Web Proxy
 Administrative Access: ☐ HTTPS ☐ PING ☐ HTTP ☐ FMG-Access
☐ SSH ☐ SNMP ☐ TELNET

☐ Secondary IP Address

Comments: Write a comment... 0/63

OK Cancel Apply

Figure 2: Loopback Interface

3. Create a Virtual IP (NAT)

- a. Navigate to Firewall Objects > Virtual IP > Virtual IP
- b. Click "Create New"
- c. Name the object (i.e.: SSLVPN_VIP)
- d. Choose your external interface
- e. Enter your secondary external IP in the "External IP Address/Range" field
- f. Enter your loopback interface's IP in the "Mapped IP Address/Range" field
- g. Check "Port Forwarding"
- h. Enter 443 in the "External Service Port" field
- i. Enter 10443 in the "Map to Port" field

The screenshot shows the configuration form for a Virtual IP (NAT) object. The fields are as follows:

- Name:** SSLVPN_VIP
- Color:** [Change]
- External Interface:** port10 (External)
- Type:** Static NAT
- Source Address Filter:** ☐ (e.g.: x.x.x.x, x.x.x.x-y.y.y.y, x.x.x.x/y)
- External IP Address/Range:** 52.12.59.5 - 52.12.59.5
- Mapped IP Address/Range:** 10.52.62.72 - 10.52.62.72
- Port Forwarding:** ☒
- Protocol:** ☒ TCP ☐ UDP ☐ SCTP
- External Service Port:** 443 - 443
- Map to Port:** 10443 - 10443

At the bottom are "OK" and "Cancel" buttons.

Figure 3: VIP - Translate SSLVPN traffic from port 443 to 10443

4. Configure firewall policy with VIP

- a. Navigate to Policy > Policy > Policy
- b. Click "Create New"
- c. Choose your external interface as the source interface
- d. Choose the loopback interface as the destination interface
- e. Choose "all" as the source address
- f. Choose the newly created VIP as the destination address
- g. Choose "ANY" for the Service
- h. Leave all other settings at default
- i. Hit OK

Source Interface/Zone	port10 (External)
Source Address	all
Destination Interface/Zone	SSLVPN_Loopback
Destination Address	SSLVPN_VIP
Schedule	always
Service	ANY
Action	ACCEPT
<input type="checkbox"/> Log Allowed Traffic <input type="checkbox"/> Enable web cache	
<input type="checkbox"/> Enable NAT	
<input type="checkbox"/> Enable Identity Based Policy <input type="checkbox"/> Resolve User Names Using FSSO Agent	
<input type="checkbox"/> UTM <input type="checkbox"/> Traffic Shaping <input type="checkbox"/> Enable Endpoint Security [Please Select]	
Tags	Applied tags Add tags
Comments	Write a comment... 0/63
<div>OK Cancel</div>	

Figure 4: Loopback/VIP Firewall Policy

5. Configure all necessary SSL VPN firewall policies.

This part is described and explained in detail in the SSL VPN documentation:
<http://docs-legacy.fortinet.com/fgt/handbook/40mr3/fortigate-sslvpn-40-mr3.pdf>

The difference here is that instead of using the external interface we configure all our policies using the Loopback interface.

In order to configure the main SSL VPN authentication policy follow these steps:

- Go to Policy > Policy > Policy
- Choose your Loopback interface for source interface
- Choose your internal interface for destination interface or whichever network you would like to provide access to via SSL VPN.
- Choose "all" for source address
- Choose your internal network for destination address (This might have to be configured if it has never been created)
- Choose "SSL-VPN" for Action
- Click on "Add" to add the user group which is allowed to authentication against the SSL VPN
- Select the appropriate options for Service and Schedule (ANY and ALWAYS in this example)
- Hit OK

j. Hit OK

Source Interface/Zone: SSLVPN_Loopback

Source Address: all

Destination Interface/Zone: port4(Internal)

Destination Address: InternalNetwork_10.50.123.254/24

Action: SSL-VPN

☐ SSL Client Certificate Restrictive

Cipher Strength: Any

☒ Configure SSL-VPN Users

Add

Rule ID	User Group	Service	Schedule	UTM	Logging
1	sslgroup	ANY	always		

☐ Customize Authentication Messages

Tags

Applied tags

Add tags

Comments

Write a comment...

OK Cancel

Figure 5: SSL VPN Authentication Firewall Policy

6. Access both IPs on port 443

You should now be able to access your primary external IP on port 443 and be presented with the FortiGate administrator logon screen. Likewise, you should also be able to access the secondary external IP on port 443 and be presented with the SSL VPN logon screen.

Note that you will not be able to access the SSL VPN via the primary IP address on port 10443 unless you configure the same firewall policy as in step 5, exchanging the loopback interface for the external interface.